

Work Order ID 73016

Tuesday, August 23, 2011 3:33:56 PM

Page 1

Item ID: D3391-025

Accept

Setup Start

Revision ID:

Item Name: Aft Tube Assembly

Stop

Start Date: 8/23/2011 Start Qty: 1.00

Required Date: 9/9/2011 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date: 11-08-20

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3391

Rev H/ DEO

100

0.00

MORI Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki CNC Lathe Large

Turn as per Folio FA599

Rev: AD & Dwg D3391 Rev: H

scribe batch # on fwd end at 90 degree

110

0.00

QC

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

Quality Control

111

0.00

QC

QC8- Inspect parts - second check

Memo

0.00

Quality Control

mm.l 11/09/06

mm.l 11/09/06

11.9.13

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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Page 2

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Tooling:

Date:

Stop



QC:

Date:

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Date:

Sequence ID/
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Tool #

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Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120



HAAS I

HAAS CNC VERTICAL MACHINING #1

0.00

0.00

B.A 11/09/15

1 0

HAAS CNC vertical machine #1

Memo

1-Machine as per Folio FA 599 Rev: AA & Dwg D3391 Rev: H
2-Deburr

130



QC

QC2- Inspect parts off machine FAI/FAIB

0.00

0.00

B.A 11/09/15

1 0

Quality Control

Memo

140



QC

QC8- Inspect parts - second check

0.00

0.00

and 11/09/16

1 0

Quality Control

Memo

Dart Aerospace Ltd ,

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Page 3

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Customer:

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Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803



11-10-12

160

0.00



BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Form as per Dwg D3391 Using Bend Prog 3391025

SAD 11-10-12 (2)

170

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

1 0 BEU/10/21

Dart Aerospace Ltd

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Page 4

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Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only.

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217
Wearplate Jig.

*****Do Not Open To Finished Size*****

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2
previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe , wearplate to 0.297"and float bag holes to 0.328" as per
Dwg D3391.

7-Deburr

DP 11-10-21

DP 11-10-24

Dart Aerospace Ltd

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Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

① 11-10-24

200

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

① SAA 11-10-25

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

① 11-10-25

Dart Aerospace Ltd

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Page 6

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Start Date: 8/23/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 9/9/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start






Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Stop



| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 220 | Skidtubes | 0.00 | | | | | | | |
|  | | | | | | | | | |
| Skidtubes | Memo | 0.00 | | | | | | | |
| Skidtubes | Instal spacers as per dwg D3391 A/R Magnabond 6398 Batch: 112820 exp. date: 12-8-30 cure time 12hrs as per QSI0015 | | | | | | | | |
| 230 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
|  | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |
| 235 | Pressure Wash per QSI005 4.3 | 0.00 | | | | | | | |
|  | | | | | | | | | |
| HandFinish | Memo | 0.00 | | | | | | | |
| Hand Finishing | AND REALODINE AS PER PAR09-043 | | | | | | | | |

> DP

11-10-25

8/11/17

11/10/27

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Page 7

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Stop



Start Date: 8/23/2011 Start Qty: 1.00



Cust Item ID:

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Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

240

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

IXP M-L 11/10/31

250

QC3- Inspect Part Finish

0.00



QC

Quality Control

Memo

0.00

1. d M 11/10/31

260

HandFinishing

0.00



HandFinish

Hand Finishing

Memo

1-Install inserts as per Dwg D3391

2-Install Aft Cap as per Dwg D3391

A/ R Sikaflex-241/-291

Sikaflex expiry date:

0.00

1. d M 11/10/31

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Tuesday, August 23, 2011 3:33:56 PM



Page 8

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Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

270

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

m/ 11 10 01 (1)

280

Identify as per dwg & Stock Location: w/o

0.00



Packaging

Memo

0.00

Packaging

D412-742-043/ B75563 1 6 rel 11/10/11

290

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/11/01 11-10-01

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
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NOTE: Date & initial all entries

Picklist Print

Tuesday, August 23, 2011 3:34:01 PM

Page 1

Work Order ID: 73016



Parent Item: D3391-025



Parent Item Name: Aft Tube Assembly

Start Date: 8/23/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev B 06-02-07 ECN773 dwg rev. D EC
 IPP Rev:C 06-03-28 Update Manuf. Instructions JLM
 IPP rev D 07.03.20 revF dwg EC
 IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified by: DD
 IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC
 IPP Rev:G 08-09-10 revH as per dwg DD verified by:EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D6014-090 | | Manufactured | No | | | 100 | Each | 33.0000 | 1 | 1 | | | |
| ALUMINUM EXTRUSION | | | | | | | | | | | | | |

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| LG | 33 | |
| 56572 | 1 | |
| 56170 | 32 | |

| | | | | | | | | | | | | | |
|-----------------|--|--------------|----|--|--|-----|------|----------|---|---|--|--|--|
| D3670-4-200 | | Manufactured | No | | | 230 | Each | 152.0000 | 4 | 4 | | | |
| SPACER | | | | | | | | | | | | | |

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| LG | 56 | |
| 70822 | 14 | |
| 71850 | 42 | |
| LG001 | 96 | |
| 72851 | 96 | |

mmil 11/08/11

④ DP 11-10-25

Dart Aerospace Ltd

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NOTE: Date & initial all entries

Picklist Print

Tuesday, August 23, 2011 3:34:01 PM

Page 2

Work Order ID: 73016

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 8/23/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D2646
Aft Cap

Manufactured No

270 Each

96.0000 1 1



u110131

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| FP004 | 49 | |
| 68280 | 49 | |
| FP006 | 5 | |
| 62678 | 5 | |
| FP-4 | 38 | |
| 70945 | 1 | |
| 71070 | 37 | |
| fp5 | 4 | |
| 71038 | 4 | |

D3537-1
Wearpad

Manufactured No

270 Each

17.0000 1 1



u110131

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| FP001 | 10 | |
| 69530 | 10 | |
| FP017 | 7 | |
| 69817 | 5 | |
| 70686 | 2 | |

1379597

x1

D3537-7
Wearpad

Manufactured No

270 Each

0.0000 1 1



B71689 (1) u110131

D3553-1
Gasket

Manufactured No

270 Each

4.0000 1 1



u110131

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| FP013 | 4 | |
| 56568 | 4 | |

B73155

x1

Tuesday, August 23, 2011 3:34:01 PM

Shop Packet Print

Page 2

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
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Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 8/23/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3553-3 Manufactured No

270 Each

28.0000

1

1



Gasket



M 11/10/31

Location

Loc Qty

Loc Code

FP

20

31631

20

FP013

8

53480

8

x1

D3672-1 Manufactured No

270 Each

1,186.000

2

2



Phenolic Washer



M 11/10/31

Location

Loc Qty

Loc Code

ST074

1184

64177

188

66821

496

72229

500

x2

ST077

2

52505

2

ALS4-1032-130 Purchased No

260 Each

1,559.000

14

14



Insert



M 11/10/31

Location

Loc Qty

Loc Code

ST281

370

118386

370

ST282

1189

117717

54

118237

879

118312

256

M118966

v14

Dart Aerospace Ltd

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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Tuesday, August 23, 2011 3:34:01 PM

Work Order ID: 73016

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 8/23/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No.

270

Each

931.0000

12

12



Insert



all 11/16/31

Location

Loc Qty

Loc Code

ST282

931

118696

x12

110768

62

117717

9

118386

860

AN3C4A

Purchased

No

270

Each

2,261.000

6

6



BOLT



all 11/16/31

Location

Loc Qty

Loc Code

ST350

2261

117313

2

117688

36

118706

x6

117795

1

117872

22

118012

20

118112

40

118451

1000

118628

1140

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Page 5

Tuesday, August 23, 2011 3:34:01 PM

Work Order ID: 73016



Parent Item: D3391-025



Parent Item Name: Aft Tube Assembly

Start Date: 8/23/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C5A

Purchased

No

270

Each

1,285.000

4

4



Bolt



u 11/10/31

Location

Loc Qty

Loc Code

FP-A

7

115835

7

ST350

1278

116419

28

116549

42

117343

474

117764

222

117872

12

118451

500

x4

AN960C10L

NAS1149C0332

Purchased

No

270

Each

0.0000

10

10



washer

X

118354



(x10) u 11/10/31

Tuesday, August 23, 2011 3:34:01 PM

Shop Packet Print

Page 5

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

| | | | |
|--|--|---------------------|---------|
| DART AEROSPACE LTD | | Work Order: | 73016 |
| Description: Float Skidtube (412) | | Part Number: | D3391-3 |
| Inspection Dwg: D3391 Rev: H | | Page 1 of 1 | |

FIRST ARTICLE INSPECTION CHECKLIST

| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|----------------------|-----------|------------------|--------|--------|----------------------|-----------|
| Lathe Section | | | | | | |
| 14.000 | +/-0.010 | 14.00 | ✓ | | tape | amm, vco2 |
| 3.500 | +/-0.010 | 3.500 | ✓ | | vern | cnc-08 |
| 88.93 | +/-0.030 | 88.92 | ✓ | | tape | amm, v-02 |
| Ø3.200 | +/-0.010 | 3.200 | ✓ | | mic | cnc-05 |
| 88.93 | +/-0.030 | 88.92 | ✓ | | tape | amm, v-02 |
| Ø3.750 | +/-0.010 | 3.750 | ✓ | | vern | cnc-08 |
| 30° x 160" chamfer | +/-0.010 | 30° x 160 | ✓ | | ✓ | |

| | |
|--------------------------------|-----------------------|
| Measured by: amm, v | Date: 11/09/11 |
| Audited by: [Signature] | Date: 11.9.13 |

| | | | | | | |
|---------------------|---------------|---------|---|--|------|--------|
| HAAS Section | | | | | | |
| 1.526 | +0.000/-0.030 | 1.510 | ✓ | | Vern | GA-01 |
| 7.500 | +/-0.010 | 7.501 | ✓ | | Vern | CNC-02 |
| 27.750 | +/-0.010 | 27.750 | ✓ | | TAPE | GA-12 |
| 31.750 | +/-0.010 | 31.750 | ✓ | | " | " |
| 35.250 | +/-0.010 | 35.250 | ✓ | | " | " |
| 3.300 | +/-0.010 | 3.300 | ✓ | | Vern | CNC-07 |
| 0.200 | +/-0.010 | 0.201 | ✓ | | Vern | GA-01 |
| 3.520 | +/-0.010 | 3.521 | ✓ | | Mic | GA-10 |
| 0.687 | +0.010/-0.000 | 0.690 | ✓ | | Vern | GA-01 |
| R0.062 | +/-0.010 | R0.062 | ✓ | | R-6 | ref. |
| Ø0.484 | +0.005/-0.001 | Ø 0.488 | ✓ | | Vern | GA-01 |

| | |
|--------------------------------|-----------------------|
| Measured by: H.A | Date: 11/09/15 |
| Audited by: [Signature] | Date: 11/09/16 |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|--|------------|----------|
| A | 06.04.24 | New Issue P/O D3391-015/-025 | KJ/JLM | |
| B | 06.06.19 | Dwg revision update | KJ/JLM | |
| C | 07.04.20 | Ø0.208 dimension removed | KJ/JLM | |
| D | 07.09.06 | 0.400 dimension removed | KJ/JLM | |
| E | 07.11.23 | Dwg Rev. updated | KJ/EC/DD | |
| F | 09.04.27 | Dimensions updated per Rev H and NCR09-028 | KJ/JLM | |
| G | 09.11.16 | Dimension 0.200 removed | KJ | |
| H | 11.06.21 | Dimension 44.995 removed | KJ | |

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
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NOTE: Date & initial all entries

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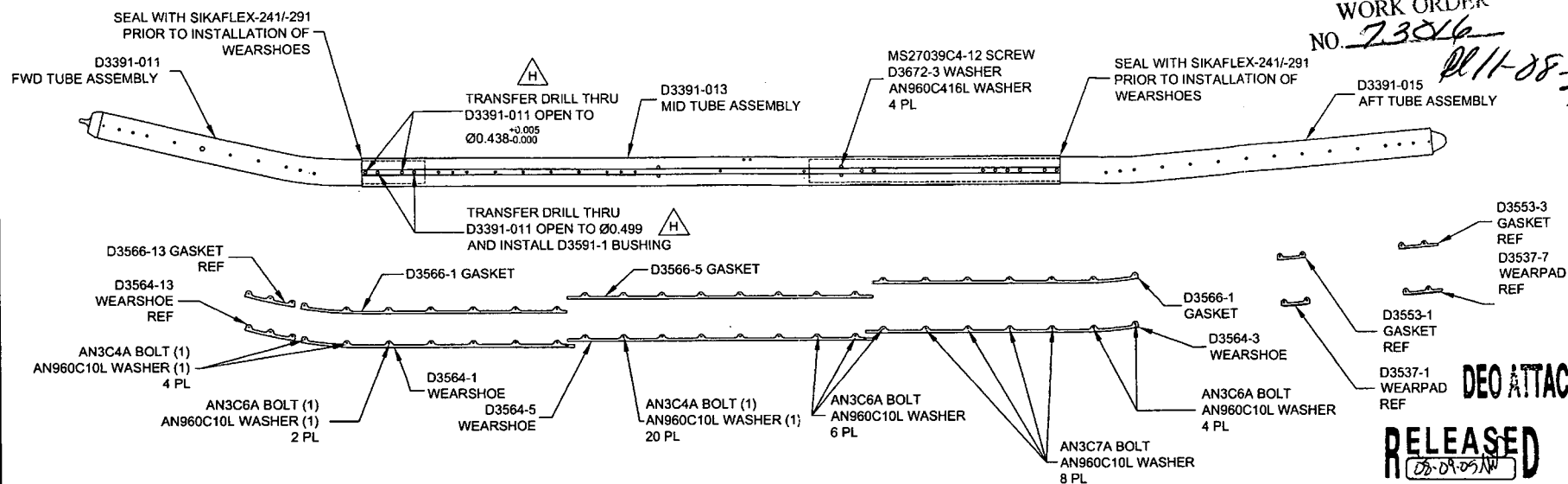
SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

NO. 73816

08/11/08-36



D3391-041 ASSEMBLY

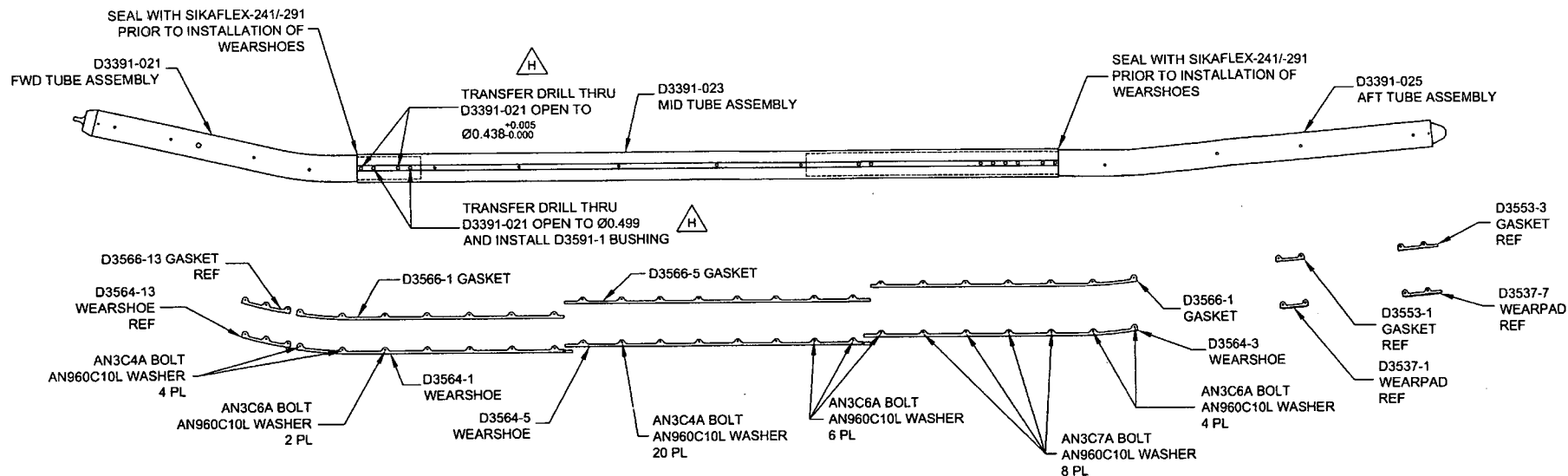
D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

| QTY | PART NUMBER | DESCRIPTION |
|-----|--------------|-------------------------|
| X | D3391-041 | FLOAT SKIDTUBE ASSEMBLY |
| 1 | D3391-011 | FWD TUBE ASSEMBLY |
| 1 | D3391-013 | MID TUBE ASSEMBLY |
| 1 | D3391-015 | AFT TUBE ASSEMBLY |
| 1 | D3564-1 | WEARSHOE |
| 1 | D3564-3 | WEARSHOE |
| 1 | D3564-5 | WEARSHOE |
| 2 | D3566-1 | GASKET |
| 1 | D3566-5 | GASKET |
| 2 | D3591-1 | BUSHING |
| 4 | D3672-3 | WASHER |
| 24 | AN3C4A | BOLT |
| 12 | AN3C6A | BOLT |
| 8 | AN3C7A | BOLT |
| 44 | AN960C10L | WASHER |
| 4 | MS27039C4-12 | SCREW |
| 4 | AN960C416L | WASHER |

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø.297 SIZE HOLES
FOR WEARSHOE INSERTS. C-BORE AS NOTED AND INSTALL INSERTS EXCEPT
WHERE INDICATED.

| | | | |
|------------|---|--|--------------|
| H | DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø.438 DIM WAS 4 PL. ADDED Ø.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø.438 DIM WAS 4 PL. ADDED Ø.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074) | AJS | 08.08.20 |
| G | REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS. DWG REORGANIZED FOR CLARITY | DC | 07.07.31 |
| F | ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021 | PH | 07.01.18 |
| E | CHANGE TOLERANCE, EASE MANUFACTURE | PH | 06.04.25 |
| D | UPDATE TOLERANCE, CHANGE HOLE SIZE | PH | 06.01.23 |
| C | LENGTHEN AFT EXTENSION | PH | 05.09.27 |
| B | DRAWING UPDATES | PH | 05.06.10 |
| A | NEW ISSUE | PH | 05.02.07 |
| REV | DESCRIPTION | BY | DATE |
| DESIGN | PH | DART AEROSPACE USA, INC | |
| DRAWN | AJS | PORT HADLOCK, WA | |
| CHECKED | | DRAWING NO. | REV. H |
| MFG. APPR. | | D3391 | SHEET 1 OF 8 |
| APPROVED | | TITLE | SCALE |
| DE APPR. | | 412 FLOAT SKIDTUBE | NTS |
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D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

| QTY | PART NUMBER | DESCRIPTION |
|-----|-------------|-------------------------|
| X | D3391-043 | FLOAT SKIDTUBE ASSEMBLY |
| 1 | D3391-021 | FWD TUBE ASSEMBLY |
| 1 | D3391-023 | MID TUBE ASSEMBLY |
| 1 | D3391-025 | AFT TUBE ASSEMBLY |
| 1 | D3564-1 | WEARSHOE |
| 1 | D3564-3 | WEARSHOE |
| 1 | D3564-5 | WEARSHOE |
| 2 | D3566-1 | GASKET |
| 2 | D3566-5 | GASKET |
| 2 | D3591-1 | BUSHING |
| 24 | AN3C4A | BOLT |
| 12 | AN3C6A | BOLT |
| 8 | AN3C7A | BOLT |
| 44 | AN960C10L | WASHER |

GENERAL NOTES

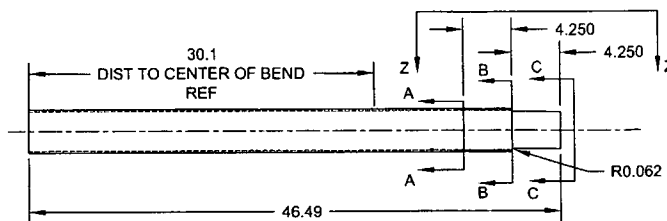
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

7304

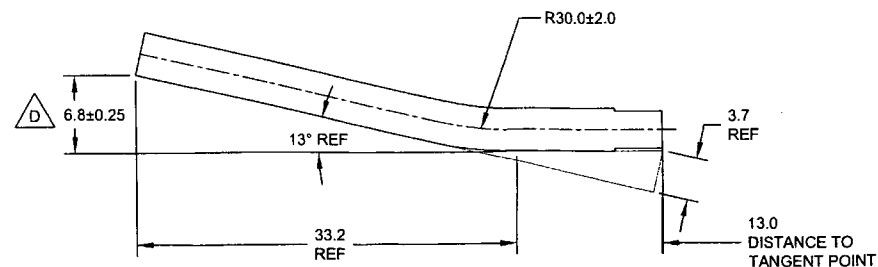
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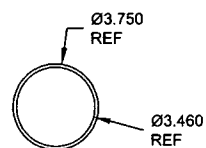
| | | | |
|------------|----------|--|--------------|
| DESIGN | PH | DART AEROSPACE USA, INC | |
| DRAWN | AJS | PORT HADLOCK, WA | |
| CHECKED | | DRAWING NO. | REV. H |
| MFG. APPR. | | D3391 | SHEET 2 OF 8 |
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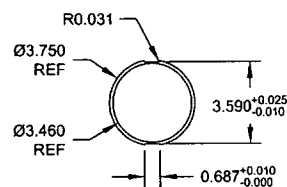
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



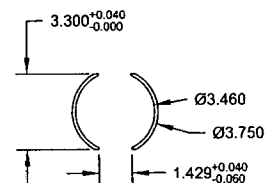
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



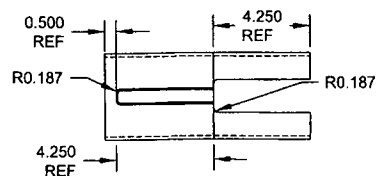
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X

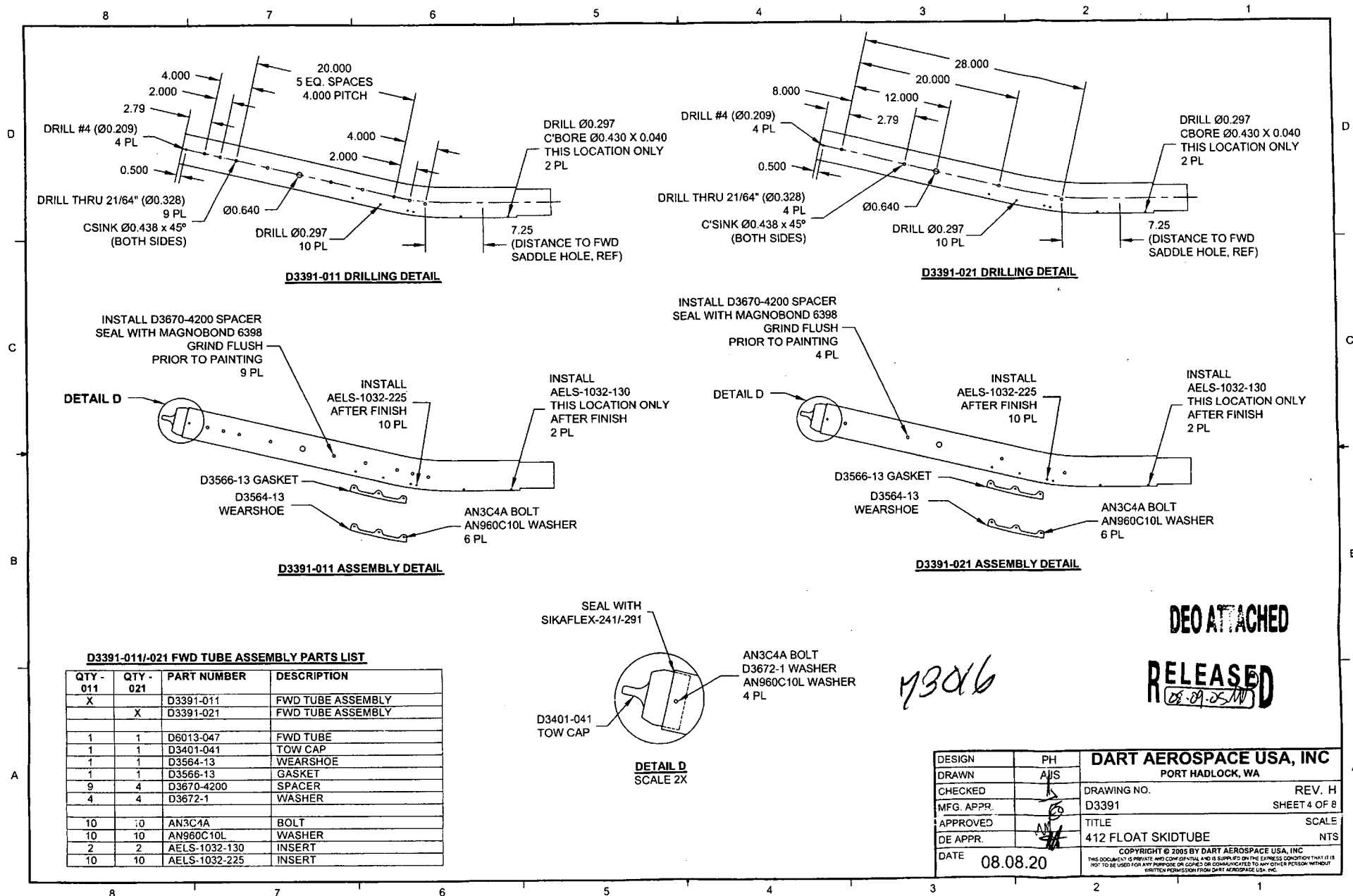


VIEW Z-Z
SCALE 2X

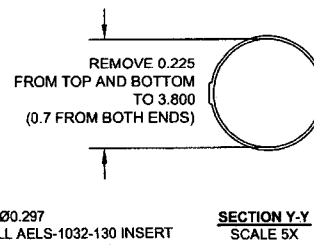
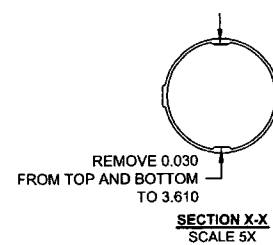
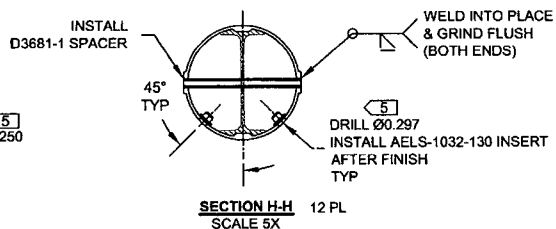
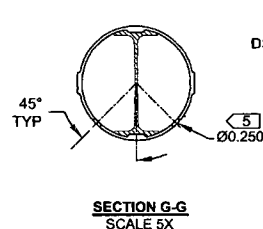
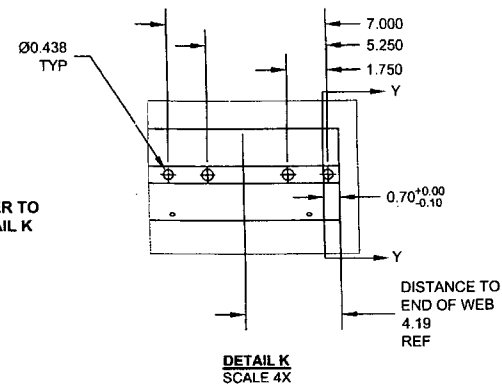
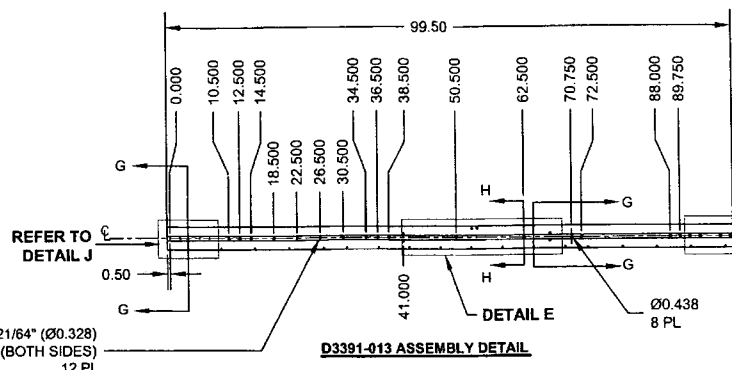
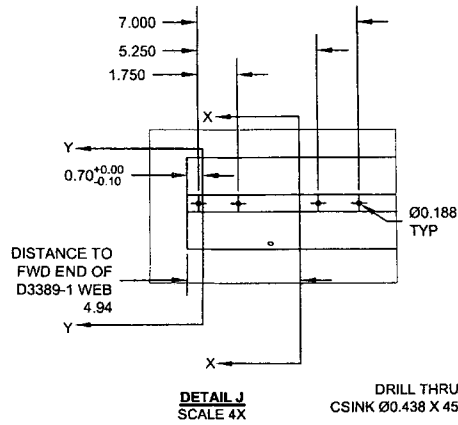
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8 7 6 5 4 3 2 1

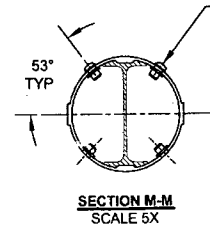
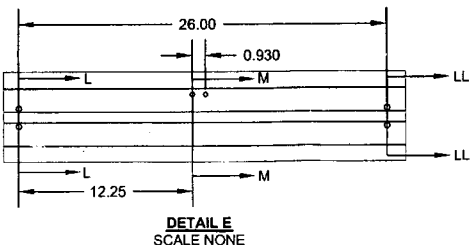


D3391-013 MID TUBE ASSEMBLY PARTS LIST

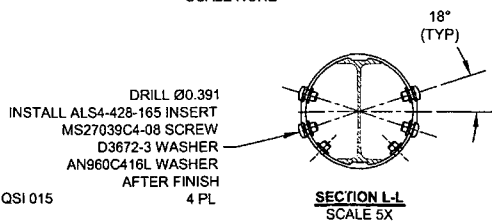
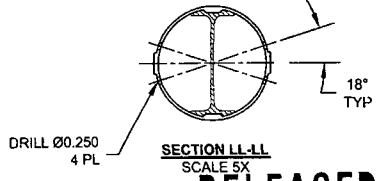
| QTY | PART NUMBER | DESCRIPTION |
|-----|---------------|-------------------|
| X | D3391-013 | MID TUBE ASSEMBLY |
| 1 | D2500-1-100 | EXTRUSION |
| 1 | D3389-1 | WEB |
| 4 | D3672-1 | WASHER |
| 4 | D3672-3 | WASHER |
| 12 | D3681-1 | SPACER |
| 24 | AELS-1032-130 | INSERT |
| 4 | ALS4-428-165 | INSERT |
| 4 | AN960C10L | WASHER |
| 4 | AN960C416L | WASHER |
| 4 | MS27039C1-09 | SCREW |
| 4 | MS27039C4-08 | SCREW |

D3391-013 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- WELDING: PER DART QSI 004



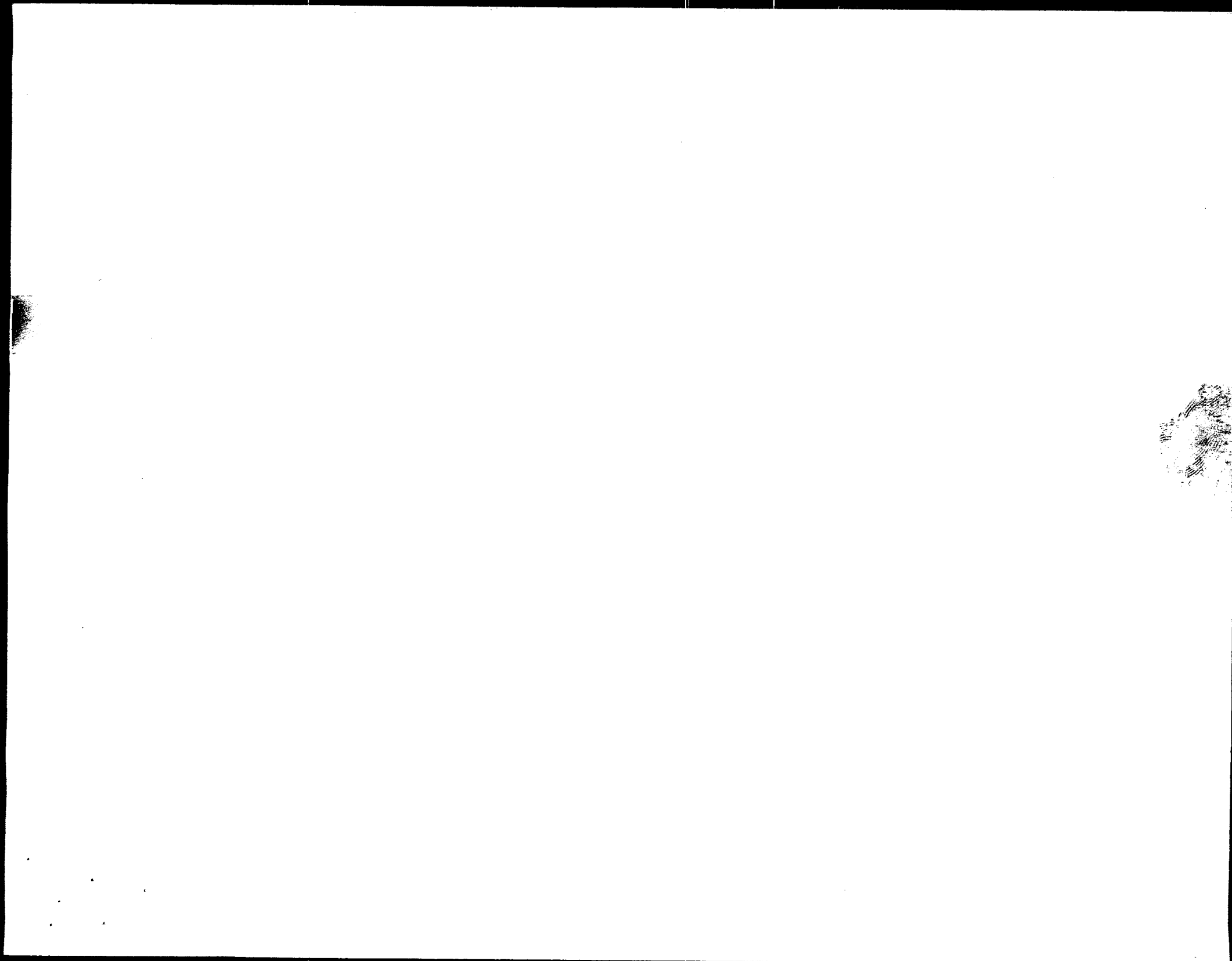
DRILL Ø0.297
INSTALL AELS-1032-130 INSERT
MS27039C1-09 SCREW
D3672-1 WASHER
AN960C10L WASHER
AFTER FINISH
4 PL

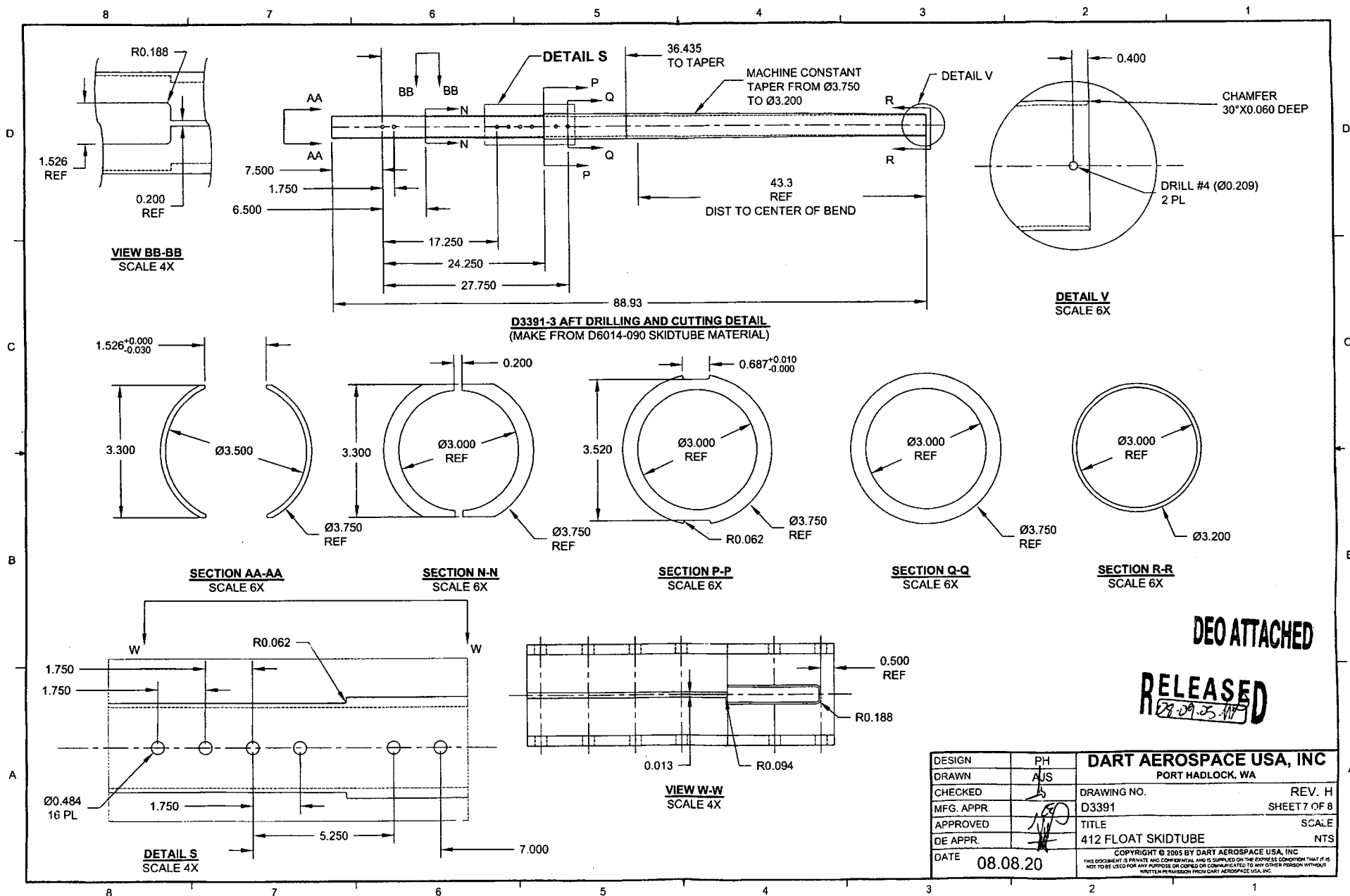


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| DRAWN | AJS | PORT HADLOCK, WA | |
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|----------------------|-----------------------------|----------------------|--|--|-------------------------|---------------------------|--------------|
| DRAWING NO. D3391 | TITLE 412 FLOAT SKIDTUBE | REV. H | DART AEROSPACE USA, INC ENGINEERING ORDER | | D.E.O. NO. D3391-H-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN <i>CP</i> | CHECKED <i>h</i> | MFG. APPR. <i>MA</i> | APPROVED <i>MP</i> | | DE APPR. <i>h</i> | | |
| DATE 09.09.23 | DATE 04.09.24 | DATE 09/09/25 | DATE 09/09/30 | | DATE 09/09/30 | | |

PURPOSE:

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

CHANGE:

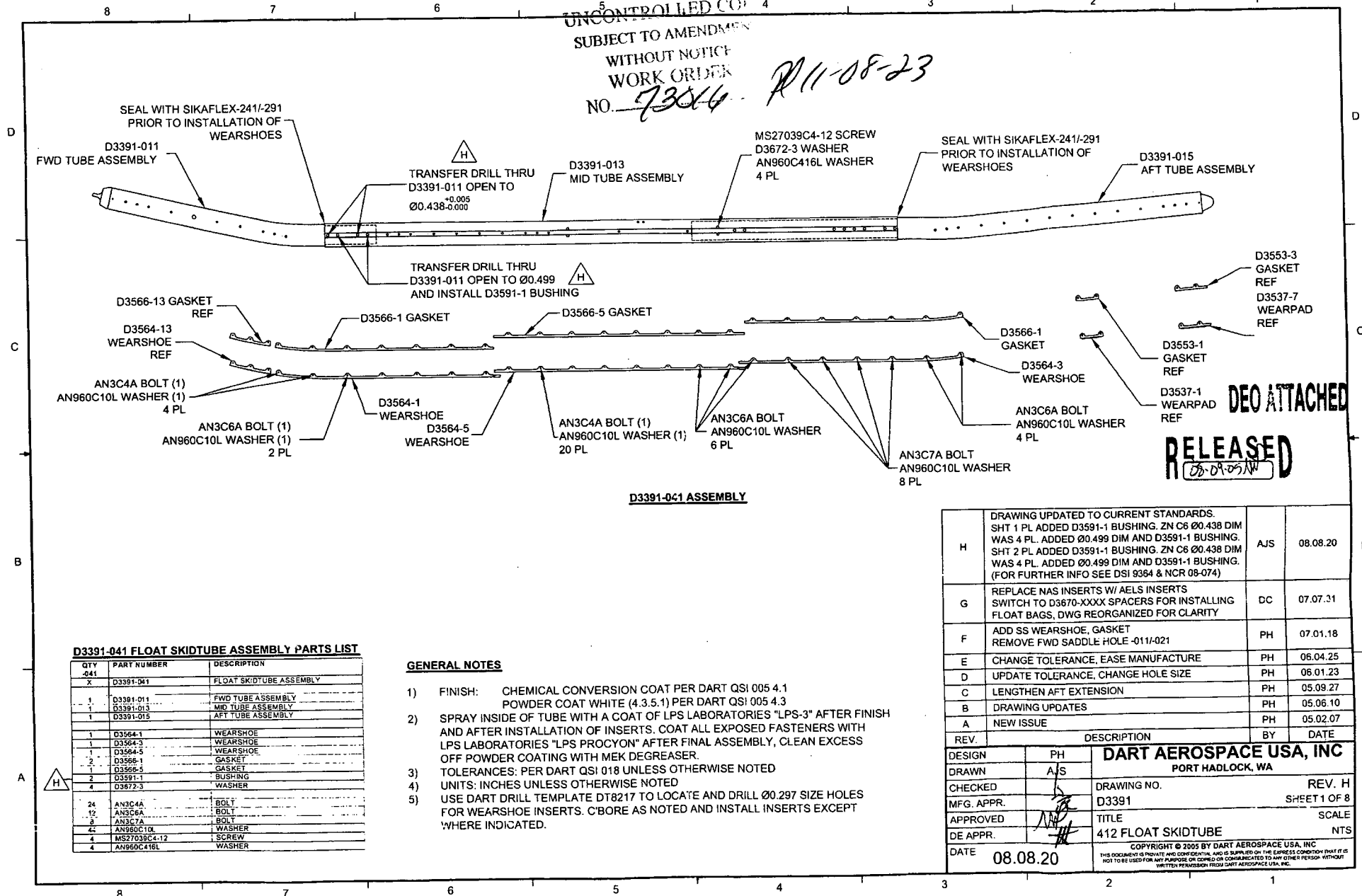
AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
OFF POWDER COATING WITH MEK DEGREASER.

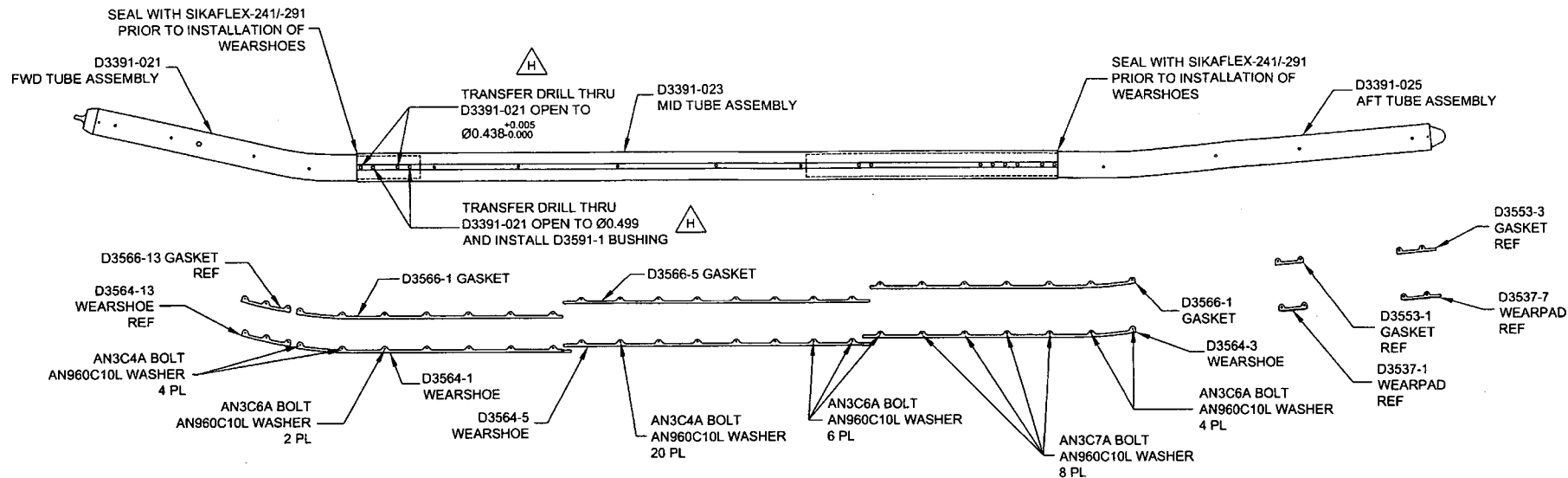
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2010-02-02

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UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 73046 R11-08-23



73016



D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

| QTY | PART NUMBER | DESCRIPTION |
|-----|-------------|-------------------------|
| 1 | D3391-043 | FLOAT SKIDTUBE ASSEMBLY |
| 1 | D3391-021 | FWD TUBE ASSEMBLY |
| 1 | D3391-023 | MID TUBE ASSEMBLY |
| 1 | D3391-025 | AFT TUBE ASSEMBLY |
| 1 | D3564-1 | WEARSHOE |
| 1 | D3564-3 | WEARSHOE |
| 1 | D3564-5 | WEARSHOE |
| 2 | D3566-1 | GASKET |
| 2 | D3566-5 | GASKET |
| 2 | D3591-1 | BUSHING |
| 24 | AN3C4A | BOLT |
| 12 | AN3C6A | BOLT |
| 8 | AN3C7A | BOLT |
| 44 | AN960C10L | WASHER |

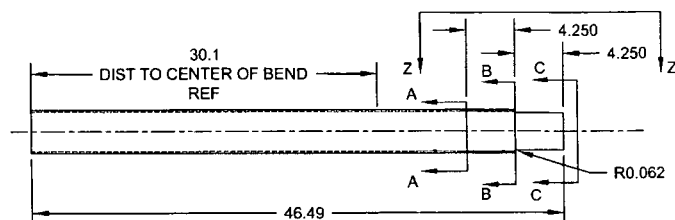
GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

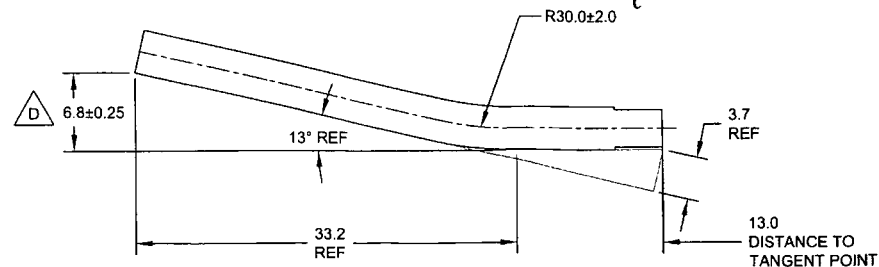
DEO ATTACHED

RELEASED
08-09-25 M

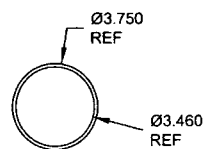
| | | | | | |
|------------|--|-------------|--|---|--|
| DESIGN | | PH | | DART AEROSPACE USA, INC | |
| DRAWN | | AUS | | PORT HADLOCK, WA | |
| CHECKED | | [Signature] | | DRAWING NO. REV. H | |
| MFG. APPR. | | [Signature] | | D3391 SHEET 2 OF 8 | |
| APPROVED | | [Signature] | | TITLE SCALE | |
| DE APPR. | | [Signature] | | 412 FLOAT SKIDTUBE NTS | |
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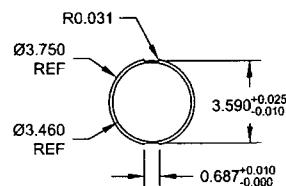
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



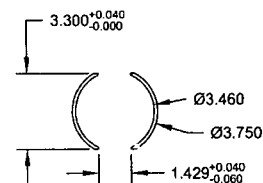
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



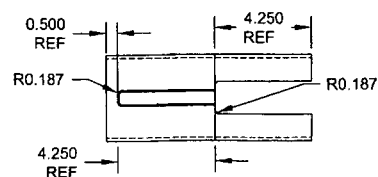
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X

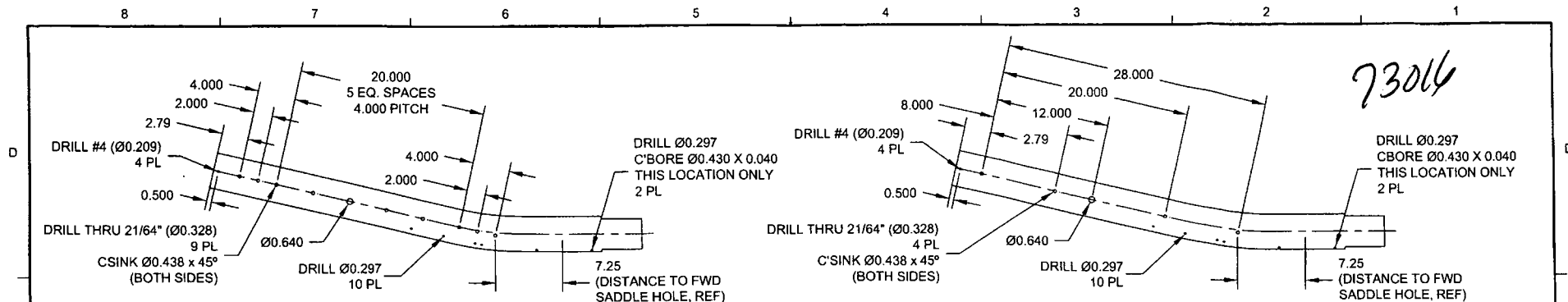


VIEW Z-Z
SCALE 2X

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8-7-05 W

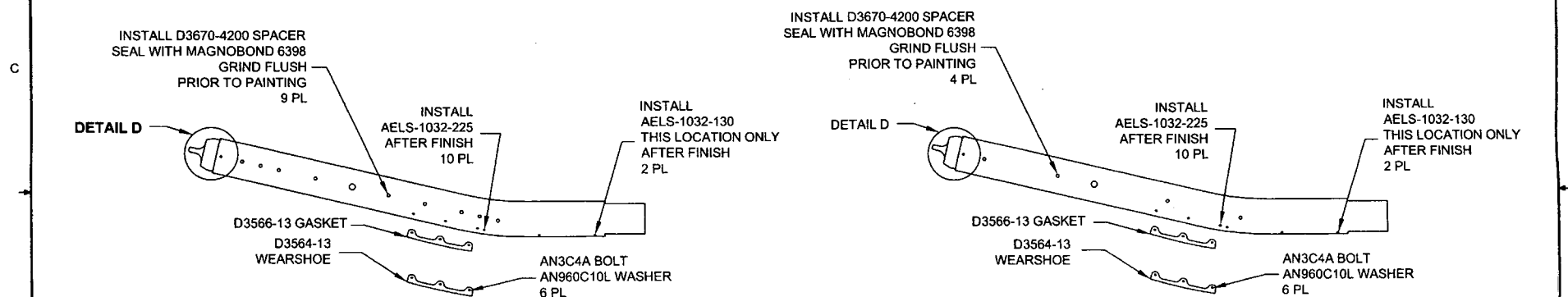
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73064



D3391-011 DRILLING DETAIL

D3391-021 DRILLING DETAIL

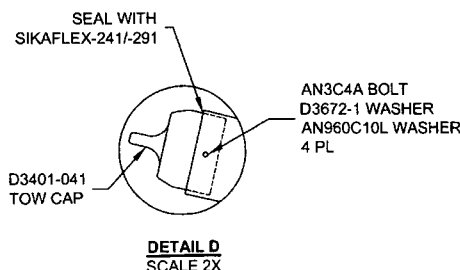


D3391-011 ASSEMBLY DETAIL

D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

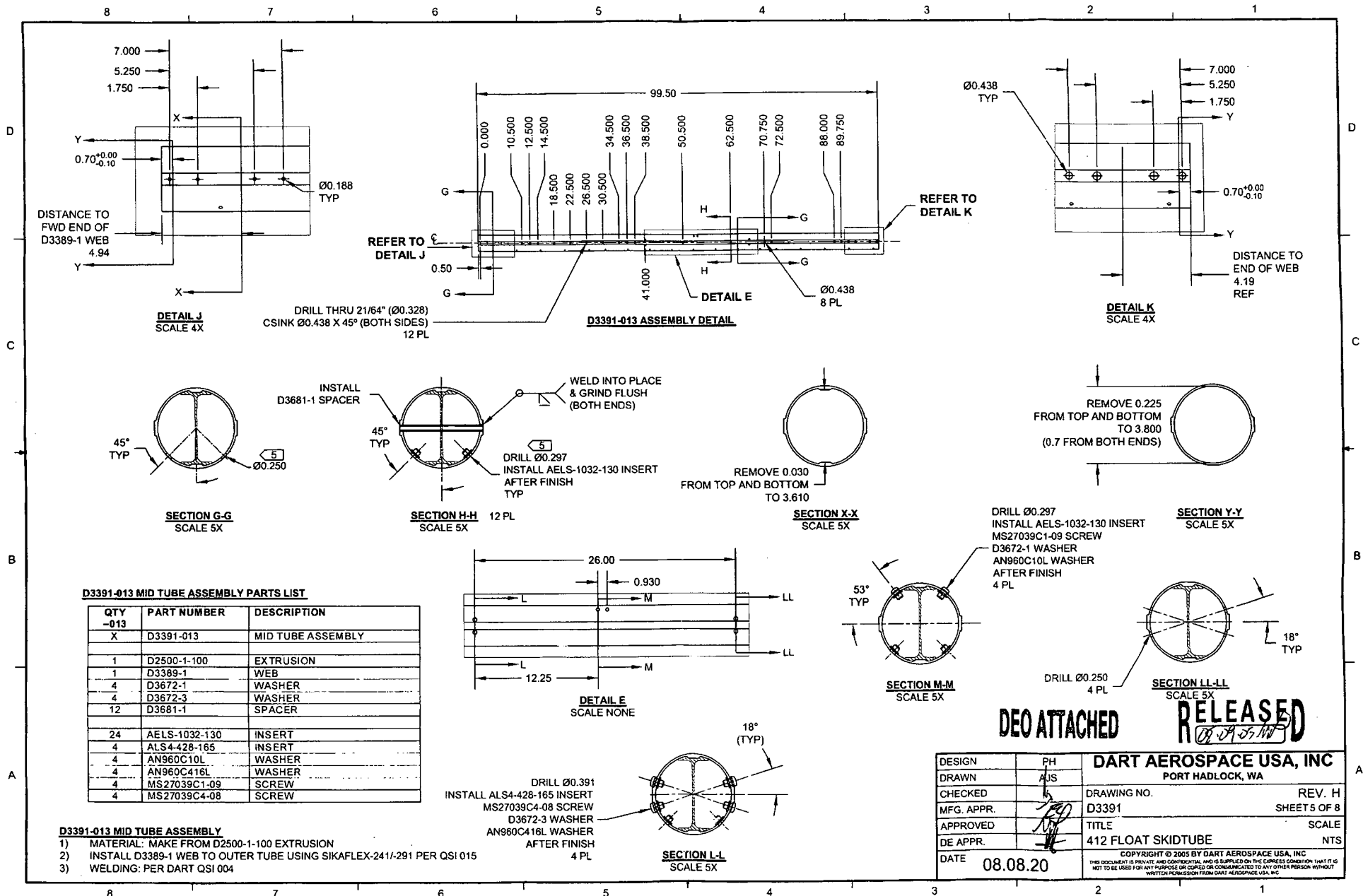
| QTY - 011 | QTY - 021 | PART NUMBER | DESCRIPTION |
|-----------|-----------|---------------|-------------------|
| X | | D3391-011 | FWD TUBE ASSEMBLY |
| | X | D3391-021 | FWD TUBE ASSEMBLY |
| 1 | 1 | D6013-047 | FWD TUBE |
| 1 | 1 | D3401-041 | TOW CAP |
| 1 | 1 | D3564-13 | WEARSHOE |
| 1 | 1 | D3566-13 | GASKET |
| 9 | 4 | D3670-4200 | SPACER |
| 4 | 4 | D3672-1 | WASHER |
| 10 | 10 | AN3C4A | BOLT |
| 10 | 10 | AN960C10L | WASHER |
| 2 | 2 | AELS-1032-130 | INSERT |
| 10 | 10 | AELS-1032-225 | INSERT |

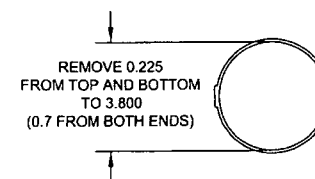
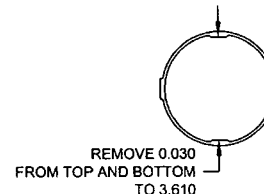
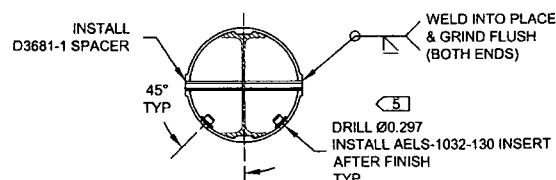
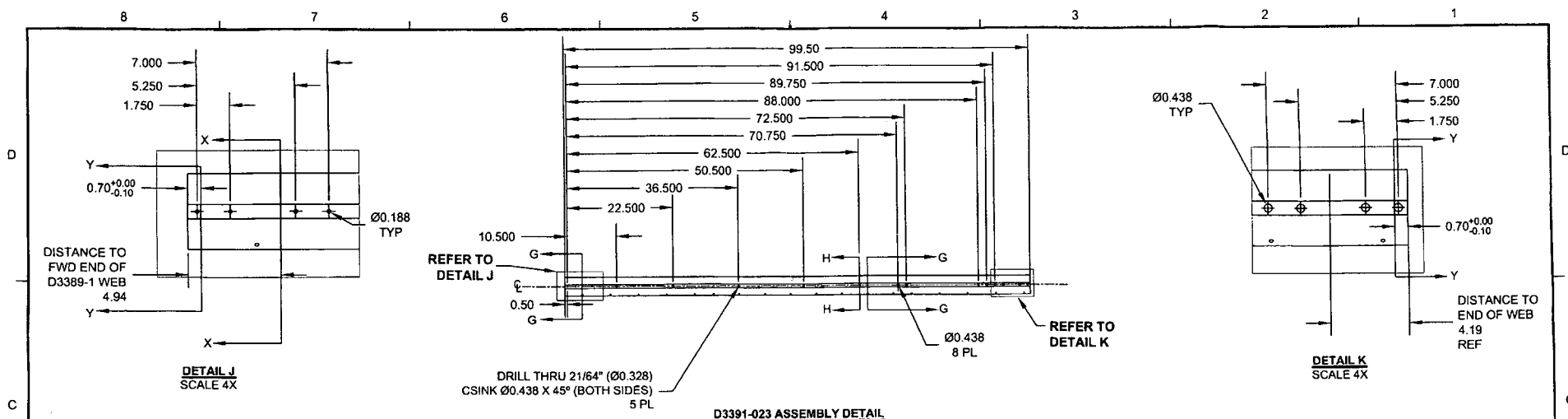


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73014





D3391-023 MID TUBE ASSEMBLY PARTS LIST

| QTY - | PART NUMBER | DESCRIPTION |
|-------|---------------|-------------------|
| 023 | | |
| X | D3391-023 | MID TUBE ASSEMBLY |
| 1 | D2500-1-100 | EXTRUSION |
| 1 | D3389-1 | WEB |
| 5 | D3681-1 | SPACER |
| 20 | AELS-1032-130 | INSERT |

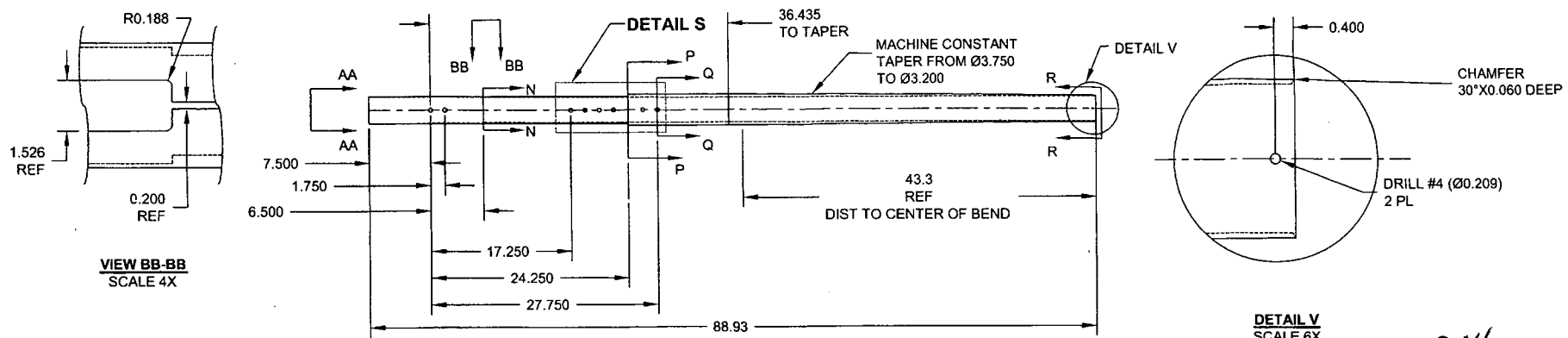
D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

| | | | |
|------------|----------|---|--------------|
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| MFG. APPR. | | D3391 | SHEET 6 OF 8 |
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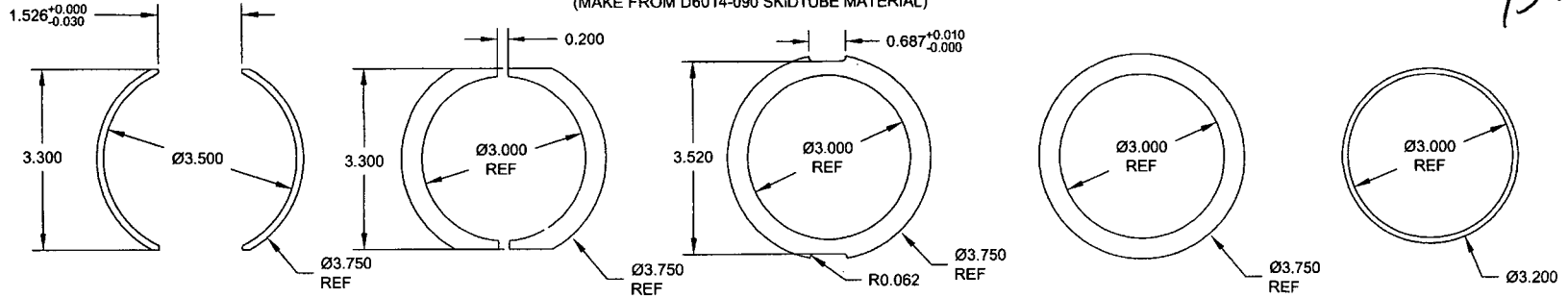
8 7 6 5 4 3 2 1



VIEW BB-BB
SCALE 4X

D3391-3 AFT DRILLING AND CUTTING DETAIL
(MAKE FROM D6014-090 SKIDTUBE MATERIAL)

DETAIL V
SCALE 6X



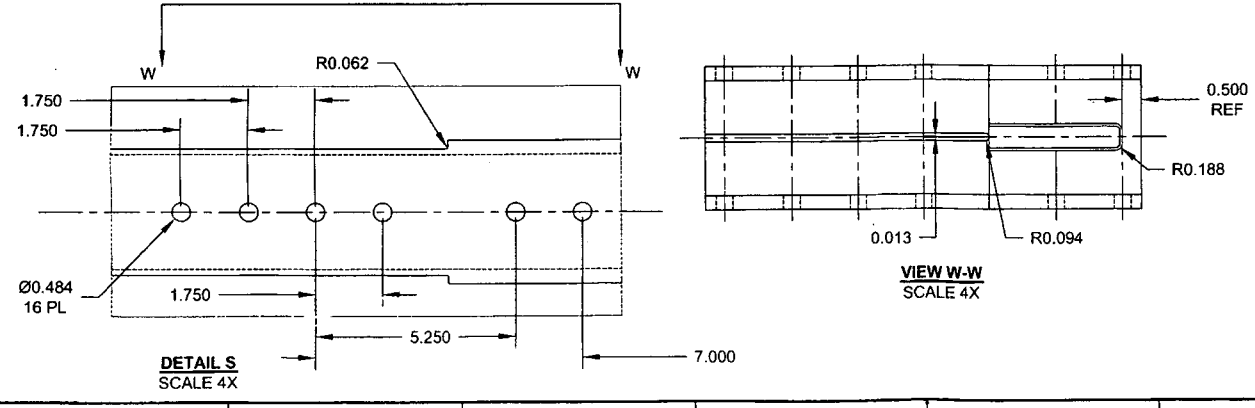
SECTION AA-AA
SCALE 6X

SECTION N-N
SCALE 6X

SECTION P-P
SCALE 6X

SECTION Q-Q
SCALE 6X

SECTION R-R
SCALE 6X



VIEW W-W
SCALE 4X

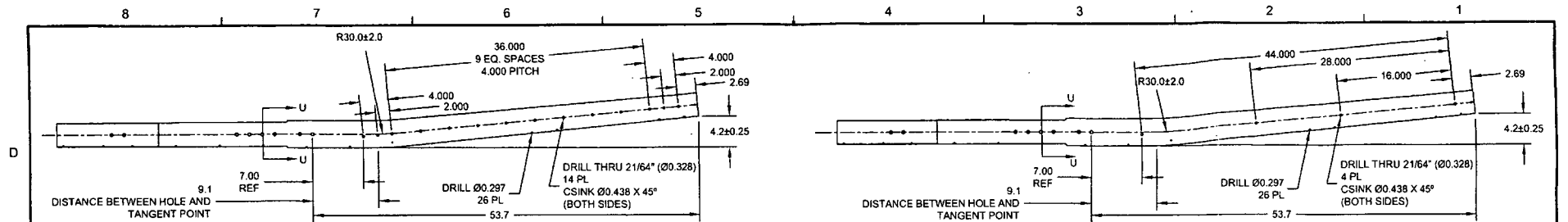
DETAIL S
SCALE 4X

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 27-09-05-117

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| MFG. APPR. | | D3391 | SHEET 7 OF 8 |
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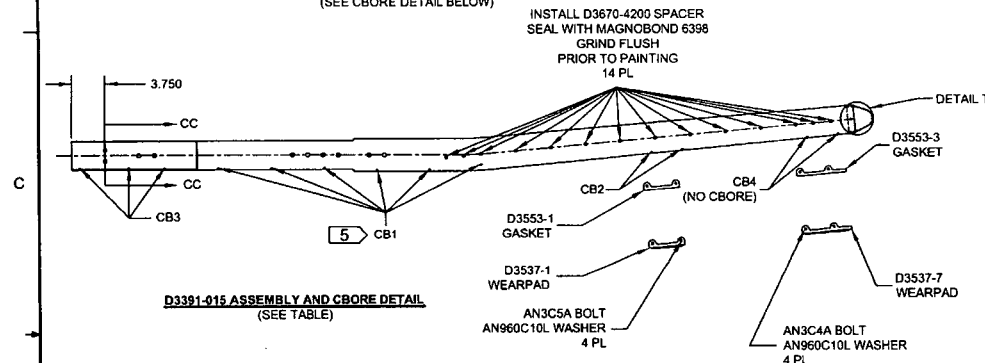
8 7 6 5 4 3 2 1

73016

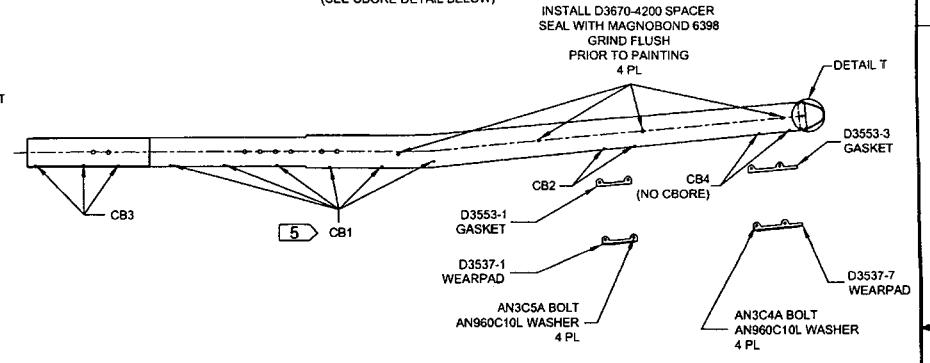


D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)

D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



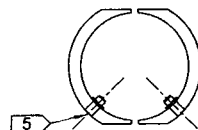
D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)



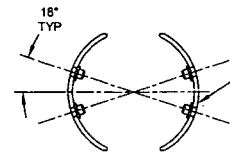
D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

| QTY - 015 | QTY - 025 | PART NUMBER | DESCRIPTION |
|-----------|-----------|---------------|-------------------|
| X | | D3391-015 | AFT TUBE ASSEMBLY |
| | X | D3391-025 | AFT TUBE ASSEMBLY |
| 1 | 1 | D6014-090 | AFT TUBE |
| 1 | 1 | D2646 | AFT CAP |
| 1 | 1 | D3537-1 | WEARPAD |
| 1 | 1 | D3537-7 | WEARPAD |
| 1 | 1 | D3553-1 | GASKET |
| 1 | 1 | D3553-3 | GASKET |
| 14 | 4 | D3670-4200 | SPACER |
| 2 | 2 | D3672-1 | WASHER |
| 14 | 14 | AELS-1032-130 | INSERT |
| 12 | 12 | AELS-1032-225 | INSERT |
| 4 | | ALS4-428-165 | INSERT |
| 6 | 6 | AN3C4A | BOLT |
| 4 | 4 | AN3C5A | BOLT |
| 10 | 10 | AN960C10L | WASHER |

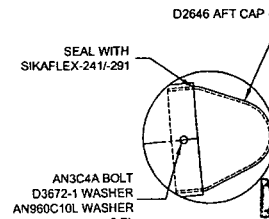


SECTION U-U
SCALE 3X



SECTION CC-CC
SCALE 3X

DRILL Ø0.391
CBORE Ø0.516 X 0.040 DEEP
INSTALL ALS4-428-165 INSERT
4 PL



DETAIL T
SCALE 4X

DEO ATTACHED

RELEASED
08-09-05

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

| HOLES MARKED | QTY D3391-015 | QTY D3391-025 | CBORE | P/N |
|--------------|---------------|---------------|----------------|---------------|
| CB1 | 12 | 12 | Ø0.430 X 0.170 | AELS-1032-225 |
| CB2 | 4 | 4 | Ø0.430 X 0.170 | AELS-1032-130 |
| CB3 | 6 | 6 | Ø0.430 X 0.040 | AELS-1032-130 |
| CB4 | 4 | 4 | NONE | AELS-1032-130 |

| | | | |
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| MFG. APPR. | JE | D3391 | SHEET 8 OF 8 |
| APPROVED | JE | TITLE | SCALE |
| DE APPR. | JE | 412 FLOAT SKIDTUBE | NTS |
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| | | | | | | | |
|----------------------|-----------------------------|-------------------------|--|--|-------------------------|---------------------------|--------------|
| DRAWING NO. D3391 | TITLE 412 FLOAT SKIDTUBE | REV. H | DART AEROSPACE USA, INC ENGINEERING ORDER | | D.E.O. NO. D3391-H-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN <i>UP</i> | CHECKED <i>h</i> | MFG. APPR. <i>AA</i> | APPROVED <i>MP</i> | | DE APPR. <i>h</i> | | |
| DATE 09.09.23 | DATE <i>04.04.24</i> | DATE <i>09/09/25</i> | DATE <i>09/09/30</i> | | DATE <i>09/09/30</i> | | |

PURPOSE:

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

CHANGE:

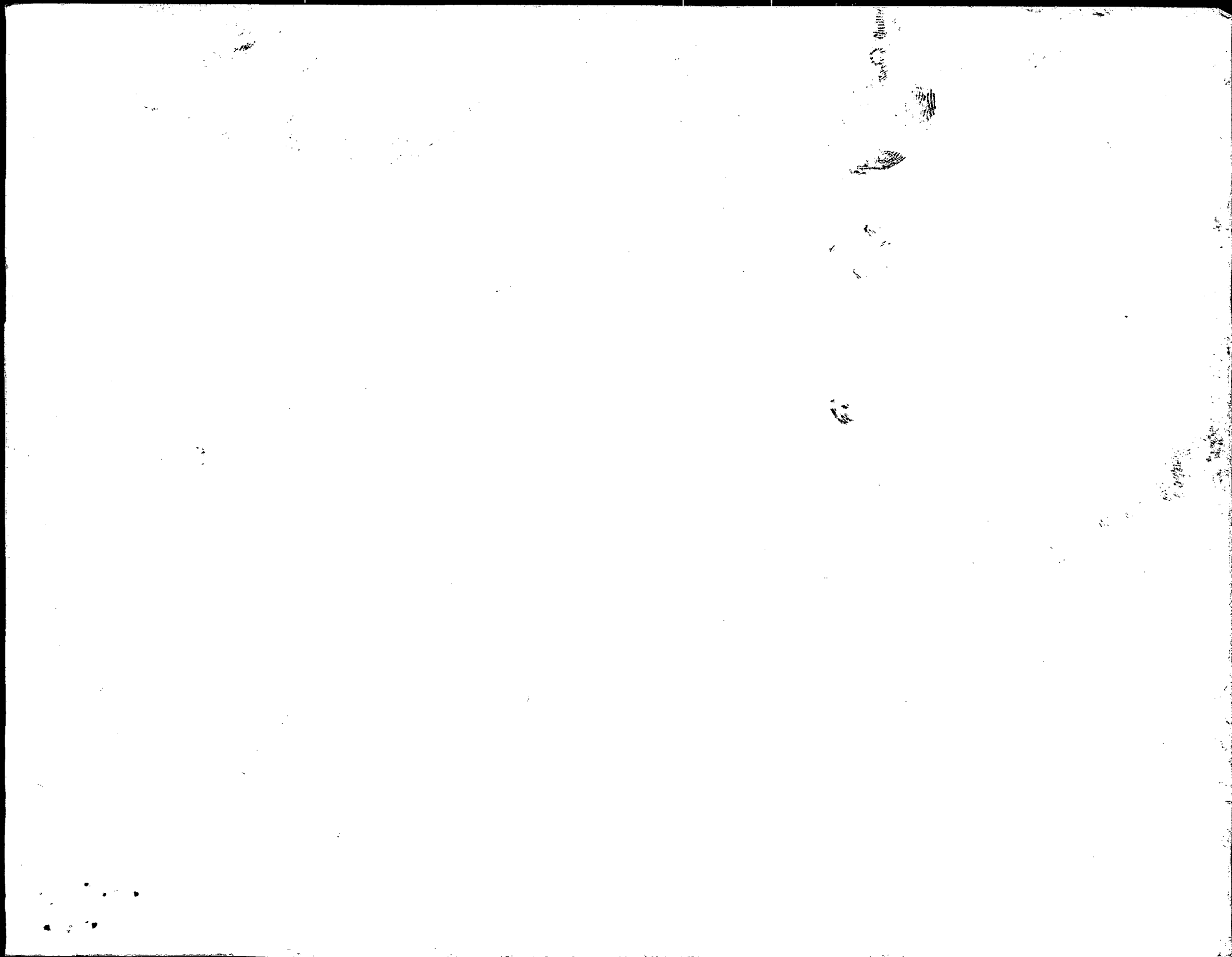
AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~
 LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
 OFF POWDER COATING WITH MEK DEGREASER.

RELEASED
 2010-02-02

MP

73064



Mike Petsche

From: Linda Lacelle <llacelle@dartaero.com>
Sent: Thursday, October 27, 2011 5:06 PM
To: 'Mike Petsche'; dshepherd@dartaero.com
Subject: FW: NEW PO 12248 FOR BRISTOW US LLC - CP/SH

fyi

From: Shirley Hay [<mailto:SHay@darths.com>]
Sent: October-27-11 3:55 PM
To: Linda Lacelle; Nancy MacLeod; sbedford@dartaero.com; mfauteux@dartaero.com; 'Brigitte Golden'; rmolnar@dartaero.com
Cc: Linda Pilon; Carole O'Rourke; Carrie Pearson
Subject: RE: NEW PO 12248 FOR BRISTOW US LLC - CP/SH

Hello

Please send out the old configuration

Regards
Shirley Hay

From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: Wednesday, October 26, 2011 3:34 PM
To: Nancy MacLeod; sbedford@dartaero.com; mfauteux@dartaero.com; 'Brigitte Golden'; rmolnar@dartaero.com
Cc: Linda Pilon; Shirley Hay; Carole O'Rourke; Carrie Pearson
Subject: RE: NEW PO 12248 FOR BRISTOW US LLC - CP/SH

There has been a recent engineering change on the float skids, and the earliest we can ship these would be the week Nov. 7th, or we ship the current CHG number with the old configuration of wearplates...please let mw know how you would like to proceed.
Linda

From: Nancy MacLeod [<mailto:NMacLeod@darths.com>]
Sent: October-20-11 1:56 PM
To: 'sbedford@dartaero.com'; 'llacelle@dartaero.com'; 'mfauteux@dartaero.com'; Brigitte Golden; rmolnar@dartaero.com
Cc: Linda Pilon; Shirley Hay; Carole O'Rourke; Carrie Pearson
Subject: NEW PO 12248 FOR BRISTOW US LLC - CP/SH

Please see the attached PO for Bristow US LLC.

If you require any further information, please let me know. Thank you,